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Congress of Deputies (Congreso de los Diputados) building in Madrid, the capital of Spain

## SPAIN'S INCONCLUSIVE ELECTION

People in Spain voted in a general election on December 20. The final result was announced the following day. It was inconclusive. There was no overall, or clear, winner. For many years, two large political parties have **dominated** Spanish politics. This election was different. Two new parties won many of the seats.

Today, Spain is a constitutional monarchy. Its monarch is head of state. Yet the Spanish king has few powers. The country's prime minister and his elected government make all the important decisions. Other nations have similar governments. Examples are: the Netherlands, Belgium, Thailand, Britain, and Japan.

Felipe the Sixth is Spain's king. He took over after his father, Juan Carlos the First, decided to step down, or abdicate, last year. Carlos became the king of Spain in 1975. Before this, General Franco (1892 – 1975) had ruled the

country as a dictator for 36 years. Soon after Franco died, King Carlos declared that Spain would be a constitutional monarchy. So, for the first time in many years, the Spanish people were able to elect their own leaders.

Like many other countries with parliamentary systems of government, the Spanish parliament (called the Cortes Generales) has two "houses". They are the Congress of Deputies, or lower house, and an upper house, called the Senate. The prime minister is usually the leader of the party with the most seats in the Congress of Deputies. The lower house, which has 350 seats, votes on important decisions. The upper house is then supposed to check on the decisions the lower house makes. It has 208 seats.

Elections for the Congress of Deputies are held every four years. To win an election outright, a party needs to

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get over half the seats in the lower house, or at least 176. This is known as a “majority”. Since Spain became a constitutional monarchy 40 years ago, one of the two big parties has always won more than 175 seats. These parties are the People’s Party (PP) and the Spanish Socialist Workers’ Party (PSOE).

Mariano Rajoy is the leader of the PP. His party got a majority at the 2011 election. Mr. Rajoy has been the country’s prime minister for the last four years. He took over from the PSOE, as it had won the previous election. Mr. Rajoy became prime minister at a difficult time.

Spain is a member of the European Union (EU). It is also part of the eurozone, or one of the 19 EU member countries that use the euro as their currency. Four years ago, several EU countries, such as Greece, Portugal, Ireland, and Spain, had serious financial problems. In Spain banks had borrowed large amounts of money to lend to property companies. Many of these companies could not sell their buildings. The government was forced to provide money to stop some banks from closing.



The number of people without jobs increased. Many companies had to reduce the number of their workers. Others shut. Mr. Rajoy decided to introduce [austerity](#) measures. This is when the government reduces, or cuts, the amount of money it spends.



Mariano Rajoy PP



Pedro Sánchez PSOE



Pablo Iglesias Podemos



Albert Rivera C's

The cuts in Spain affected many people. There were several corruption scandals. Politicians from both the PP and PSOE were accused of receiving unlawful payments. Many Spanish people became angry about austerity and dishonest politicians. Tens of thousands took part in frequent large demonstrations.

Two new political parties have become popular. One is called Podemos. In English the name means “we can”. Podemos was only set up in 2014. It is led by Pablo Iglesias. Before setting up his new party, Mr. Iglesias was a university lecturer. He is 37 years old and wears his hair in a ponytail. Many Spaniards call him “La Coleta”. This is the Spanish word for ponytail.

Albert Rivera leads the other party. It’s called Citizens, or C’s. Mr. Rivera is one year younger than Mr. Iglesias. Mr. Rivera is from a region of Spain called Catalonia. Many people who live in this part of the country want Catalonia to become an independent country. Mr. Rivera disagrees. He believes that Catalonia should be part of Spain.

Politicians and political parties are often described as being left, right or centre. Left, or left wing, politicians believe that the government is responsible for public welfare. They also want everyone to have an equal share of the country’s wealth. Right wing politicians, or those from the right, think that it’s not the

government’s job to make sure that there is equality. They believe that people are responsible for creating their own wealth and spending their own money. Politicians in the “center” believe in a mix of both “left” and “right” ideas. In Spain the PP and C’s are center right parties. The PSOE is centre left and Podemos is described as left wing.

In the election the PP got 123 seats. This was 64 fewer than four years ago. Pedro Sánchez leads the PSOE. His party won 90 seats. It used to have 110. Podemos got 69 seats and C’s 40. Neither of these parties took part in the previous election. The remaining seats went to several smaller parties. The PP got more seats than each of the others. Yet it does not have a majority, or over 175 seats. Even if the PP and C’s agreed to work together as a coalition they would not have a majority. Equally, the PSOE and Podemos combined do not have enough seats to form a government.

Sometimes when there is an inconclusive election the two main parties agree to work together. This is known as a “grand coalition”. Yet the PSOE said that it would not do this. As his party got the most seats, King Felipe will ask Mr. Rajoy to try and form a government. If he cannot do this the king will make the same offer to Mr. Sánchez. If he also fails, King Felipe will have to ask for another election to be held. ■

## MOUNTAIN GIFT PROPOSAL

Finland will celebrate its 100th anniversary in 2017. Bjørn Geir Harsson is from Norway. He retired several years ago. Mr. Harsson used to work as a cartographer, or mapmaker, for the Norwegian government. Recently, he started a [campaign](#). Mr. Harsson wants his country to give Finland one of its many mountain peaks as an anniversary gift.



Halti Mountain on the border between Norway and Finland (Ken Bartlett / Peakbagger.com)

Finland has land borders with Sweden, Norway, and Russia. The country has at least 190,000 lakes and nearly as many islands. Finland is a large country with a small population. Today, it is home to 5.5 million people. About one million live in the area around Helsinki, the country's capital city. Finland joined the European Union (EU) in 1995. Several years later, the country decided to replace its currency (the Finnish markka) with the euro.

For hundreds of years, the area that is now Finland was part of the Kingdom of Sweden. In 1808 a war between Sweden and Russia broke out. Then, the tsar, or head of the royal family, led Russia. The war lasted for 18 months. Sweden lost. The area that Russia captured was named the Grand Duchy of Finland. It became part of the Russian Empire and was therefore ruled by the tsar.

The First World War began in 1914. Before it ended four years later, there was a revolution in Russia. The Russian tsar and his government were overthrown. Vladimir Lenin (1870 – 1924) became the country's new communist leader. Soon after the revolution, Finland declared its independence. This led to a three-month long civil war. The fighting was between the "Red Guards" and the "White Guards". The Red Guards wanted Finland to be a communist country. The White Guards opposed communism. With German support, the White Guards won. Finland became a republic with its own elected leaders.



Large parts of Norway are very mountainous. Yet most of Finland is low-lying, or much flatter. Finland's highest point is in the far north of the country. Called Hålditšohkka, it is part of a fell. Fell is an old word. It is still used in Norway, Sweden and northern parts of Britain. A fell is a range of moorland hills or mountains. Hålditšohkka is 4,340 feet (1,324 meters) high. Norway has at least 200 other mountains, or peaks, that are much higher than this.

The border between Finland and Norway is very close to Hålditšohkka. This area is uninhabited, so nobody lives there. Hålditšohkka

is what's known as a [spur](#). It is connected to a higher part of the fell. The highest point is 4,478 feet (1,365 meters) above sea level. Called Halti, or Halti Mountain, it is in Norway.

If the border moved by about 656 feet (200 meters), all of Halti would be in Finland. The country would then have a new highest point, or peak. If this were done, Norway would lose only a very small amount of uninhabited land.

Mr. Harsson says that he first had the idea of the "mountain gift" in 1972. Then, he was taking measurements along the border near Halti Mountain. Many Norwegians say that they would be happy for the border to be moved. Mr. Harsson's campaign has been named "Halti as an anniversary gift". So far, the Norwegian government has not said if it agrees or disagrees with the proposal. □

## ANGKOR WAT DISCOVERIES

An international team of researchers has made some new discoveries at Angkor Wat. Using special equipment, the team has found the outlines of several buildings and structures. These are both within and outside the large temple [complex](#).

Angkor Wat is in Cambodia. The ancient temple is world famous. Angkor Wat is a modern name. It means "temple city". Nowadays, people from all around the world travel to Cambodia to visit Angkor Wat. The temple is the national symbol of Cambodia. The country's flag includes an outline of its buildings.

King Suryavarman the Second started work on the temple in the early 12th century. It's thought that the building work was completed around 1150. This was soon after the king's death. The temple is

surrounded by a wide, rectangular moat. It encloses an area of about 0.8 square miles (two square kilometers). At first, Angkor Wat was a Hindu temple. It was dedicated to Vishnu, the popular Hindu god. However, in the 14th century other rulers used the complex as a Buddhist temple.



*Aerial view of Angkor Wat temple (Charles J. Sharp)*

When the temple was built Angkor was the capital city of the powerful Khmer Empire. This included parts of modern day Vietnam, Laos and Thailand. However, by the 1350s the empire had declined. As the Khmer Empire faded, the surrounding areas of rice fields became covered in forest. The large moat helped to protect Angkor Wat from the [encroaching](#) jungle. This probably explains why so many of the buildings are still standing.

The temple buildings are made from sandstone blocks. Some larger blocks weigh 1.5 tons. Around 7.5 million stone blocks were used to build the whole complex. All are believed to have come from [quarries](#) near Mount Kulen. The distance between the quarries and the temple is about 21 miles (34 kilometers). Some people believe that the builders dug canals from the mountain to the temple. The stone blocks could then be transported by boat. These canals filled in long ago. The land between the mountain and the temple is now covered in thick jungle.

The team of researchers checked the area inside and outside the temple. They used two types of hi-tech equipment. One was ground penetrating radar. These devices are pushed or pulled over the ground. They can record the outlines of structures that are just below the surface. The other technology is called LiDAR (light detection and ranging). These devices are fitted to small, piloted planes or unmanned drones. They fly backwards and forwards over the search area.

Every second the LiDAR equipment “fires”, or “beams” thousands of laser pulses at the ground below. It records the time it takes for the pulses to hit the ground and return to the plane. These pulses are not stopped, or blocked, by thick forest, or jungle. From these recordings, it is possible to make detailed 3-D (three-dimensional) images of the ground. The outlines of any former buildings or structures under the trees will show up on a LiDAR recording.



*Central building of Angkor Wat temple*

LiDAR can cover a large area very easily. It is also very accurate. The device can record differences in height of less than four inches (ten centimeters). LiDAR was first used to successfully look for ancient ruins in thick forests in Central America.

The new discoveries include the remains of eight towers. These used

to stand near to the entrance of the Temple complex. The researchers think that they may have formed part of a temple. This was used while the main complex was being built. Once it was completed, the towers were taken down.

Outside the complex outlines of houses, ponds, roads, and mounds, were recorded. People who worked at the temple probably used these. A large rectangular structure was the most unusual discovery. It was made of sand. Inside are a series of smaller rectangles. This structure is 0.9 by 0.4 miles (1,500 by 600 meters). The team do not know what it was used for. ■

## MANED WOLVES

The maned wolf is an unusual animal. Some people call it “a fox on stilts”. Most maned wolves live in a part of Brazil called the Cerrado. This is a large area of open forest and savannah, or grassland. A recent study has shown that there are about 17,000 maned wolves in Brazil. Their numbers are expected to decrease.

The maned wolf is South America’s largest canid. Canids (or canidae) are a biological family. They include: wolves, foxes, coyotes, jackals, and dogs. The maned wolf is not closely related to the other canids. Some people think that the animal looks like a long-legged fox. Others describe it as “a dog that looks like a fox and walks like a deer”. Yet the maned wolf is not a dog, a fox nor a wolf.

Maned wolves have large ears. At the shoulder, adults are about 35 inches (90 centimeters) tall. The animal has a black mane, or area of longer fur on the back of its neck.

Its body fur is reddish-brown. The lower parts of the animal's legs are also black. The wolf has evolved very long legs. This means that it is able to see by lifting its head above the tall grass. The animals make a strange sound. Some people say that the noise is a "roar-bark". It sounds like a large dog that cannot stop coughing.

Unlike many other canids, maned wolves do not live in packs, or groups. They spend most of the year on their own. The animals are monogamous. This means that they always mate with the same male or female. Breeding pairs share the same territory. Yet they only stay together when looking after their young pups, or offspring. After mating, the females will have between two and six pups. When very young, maned wolves are covered in black fur.



*Maned wolf in Brazil*

Most canids are carnivores, or meat eaters. Maned wolves are omnivores. So they feed on both meat and plants. The animals catch small rodents, rabbits, birds, and even fish. Surprisingly around 50% of their diet is plant matter. This includes sugar cane and tubers, or potato-like plants. Their favorite food seems to be a type of fruit called the wolf apple, or wolf fruit. These plants, or shrubs, grow in the Cerrado. Their fruit looks like a tomato. The plant is called the wolf apple because the maned wolf eats it.

Some farmers will kill maned wolves. This is because they think that the animals are a danger to their livestock. Maned wolves might take a chicken, but this is unusual. They normally prey on smaller creatures. Hunting maned wolves in Brazil is now illegal. The animal's biggest threat is habitat loss and wild dogs. Wildlife experts say that as more of the Cerrado is used for farming, or agriculture, the number of maned wolves will decline. ■

## WTO IN KENYA

A World Trade Organization (WTO) conference took place between December 15 and 18. The large meeting was held in Nairobi, the capital of Kenya. These gatherings are called "the Ministerial Conference". They are organized every other year. The last one was in 2013. It was held on Bali, one of Indonesia's many islands.

The WTO is based in Geneva, in Switzerland. A director-general leads the organization. The WTO's current leader, Roberto Azevêdo, is from Brazil. The meeting in Nairobi was run, or "chaired", by Amina Mohamed. From Kenya, she is an important government official.

The WTO has 162 member countries. Senior officials from each country attended the Ministerial Conference. Kazakhstan is the WTO's latest member. New applications from Afghanistan and Liberia were approved at the Nairobi meeting.

The WTO was set up in 1995. It acts as a referee when countries argue about trading with each other, or buying and selling goods and services. The WTO also tries to get its member countries to remove

subsidies and import tariffs. Some people describe these two things as "trade barriers".

For example, some food crops are cheaper to grow in poorer countries than in richer ones. If richer countries bought these crops, workers in the poorer ones could earn more money. This would improve their lives. These workers could then buy some of the things made in richer countries. This type of trading is called "free trade". Free trade means that there are no trade barriers.



*Amina Mohamed and Roberto Azevêdo at the WTO Ministerial Conference in Nairobi, Kenya (WTO)*

Subsidies are one of the main trade barriers. Some richer countries give money (subsidies) to many of their own farmers. These farmers are therefore paid to grow certain food crops. Often they grow too much. Some of the extra food is then sold cheaply to other countries. This is often called "dumping". It means food crops (or other items) being sold in other countries for a price less than the cost of producing them. When this happens poorer countries may not be able to sell what they grow. This is because the "dumping" price is even lower than their selling price.

Getting rid of farm subsidies in many countries has been difficult. If there were no subsidies, some farms would have to close. In several countries there are large farmers' protests when governments try to reduce subsidies. These types

of protests have happened in France and South Korea in recent years.

The other main trade barrier is import tariffs. Some governments put an extra tax, or tariff, on certain things when they are brought into their country. This means that people in the country have to pay more to buy them.

Import tariffs are often used to protect workers. For instance, a country might have many people working in shoemaking factories. The country may therefore not want less expensive shoes to be imported from other nations. If they are, the country's own shoemaking factories might have to close. This is because fewer people will buy their more expensive shoes. If the government puts a tariff on imported shoes it increases their price.

Many people think that free trade is a good idea. Yet not everyone agrees. These people say that free trade can be a disadvantage for less wealthy countries. They argue that free trade just makes richer countries even richer.



WTO Ministerial Conference in Kenya (WTO)

At the end of the Ministerial Conference a trade agreement was signed. Called the “Nairobi Package”, it includes an agreement to end farm, or agriculture, export subsidies. This is when governments give their farmers extra money to export what they produce to other countries. ■

## SEA SNAKE SURPRISE

A group of people helping to clean up some of California's beaches, in the U.S., found a sea snake. The snake was dead. Wildlife experts said that it was a yellow-bellied sea snake. The same type of sea snake was discovered on a different Californian beach a few months ago. Before this, nobody in California had seen a sea snake for over 30 years.

There are around 60 kinds of sea snake. Most live in the warmer parts of the Indian Ocean and the western Pacific. There are no sea snakes in the Atlantic Ocean.

Many sea snakes are brightly colored. Some prefer shallow waters, not far from the coast, or around coral reefs. Others live in the open ocean. Several sea snake species are found in brackish water around mangrove swamps and river **estuaries**. Brackish water has more salt in it than fresh water, but less salt than seawater.

All sea snakes are part of the cobra family. Most grow to a length of about 6.5 feet (two meters). With smaller heads and flattened tails, they look like eels. Eels are a type of fish. They use their gills to get oxygen from the water. Sea snakes have lungs. They therefore come to the surface to breathe. Most sea snakes can stay under water for up to an hour. They then have to return to the surface for air. Sea snakes breathe through their nostrils. These have special flaps, or movable valves. The sea snake's nostril flaps close as soon as it goes under water. This stops any seawater from getting into the creature's lungs.

Most types of sea snake spend all their time in the sea. They give birth to live young. A few come onto the

shore to lay eggs. Yet most species find it difficult to move on land. If they are washed up on the coast, they normally die soon afterwards. Females can have between two and 25 offspring. They usually give birth once every two years.

Sea snakes are poisonous. Most have very strong venom. However, their mouths do not open wide and they have short fangs. This means that they are unlikely to bite a human. Sea snakes are not aggressive. They use their venom for defense and to kill their prey. Sea snakes feed mostly on fish and fish eggs. They are very good swimmers and can move forwards and backwards.



Yellow-bellied sea snake (*Panacetacea*)

Of all the species, the yellow-bellied sea snake is the most wide ranging. The snake's upper body is a black or dark brown color. Their name comes from their underside, which is bright yellow. Like other sea snakes, they live in the Indian and western Pacific Oceans. However, yellowbellies are also found in the eastern Pacific Ocean, closer to South America and Mexico.

Wildlife experts in California say that the sea snakes have come much farther north than they usually do. A **phenomenon** called El Niño probably explains why. During an El Niño, parts of the eastern Pacific Ocean become much warmer.

Nobody knows what causes this. Currently, there is a “strong” El Niño. So seawater temperatures off the coast of California are much higher than normal. On average, an El Niño event happens about once every five years. ■

## PRESIDENT PUTIN QUESTIONED

Vladimir Putin is the president of Russia. He first became the country’s leader 15 years ago. Some people accuse Mr. Putin of reducing press freedoms in Russia. There are not many newspapers and news broadcasters that criticize the Russian president. A few that did this in the past were forced to close or change their reporters.

Leaders of many countries often speak to news reporters. Often, after an important announcement, reporters, or journalists, will be invited to a press conference. There, the leader will spend 15 to 20 minutes answering their questions. In Russia, this type of press conference is unusual. However, at the end of each year, Mr. Putin organizes a very large press conference. Journalists working for newspapers and television companies in Russia and in other countries can take part. The person in charge invites reporters to ask their questions. Mr. Putin then answers them. This annual event is shown live on television.

This year Mr. Putin held his press conference on December 17. It took place in Moscow, Russia’s capital city. Over 1,300 journalists attended.

Mr. Putin first became Russia’s president in 2000. At that time, Russians elected their president every four years. The president could serve two successive four-year

terms. So, after eight years as president, Mr. Putin had to stand down. He then became the country’s prime minister. Dmitry Medvedev was elected as the new president. Four years later, Mr. Medvedev stood down. Mr. Putin was elected as president once again and Mr. Medvedev became prime minister. Many people suspect that Mr. Putin and Mr. Medvedev had planned for this to happen.



*President Putin at his annual press conference*

While Mr. Putin was prime minister, Russia’s constitution was changed. This is the set of rules, or laws, by which a country is governed. Russian presidential elections are now held every six years and not four. A president can therefore serve two six-year terms. If Mr. Putin wins the next election in 2018, he will be Russia’s president until 2024. In Russia, Mr. Putin is very popular. Most Russians admire him for his strong leadership.

At the press conference, Mr. Putin was asked questions about Russia’s economy, Ukraine and the war in Syria. Russia has huge supplies of oil, gas, and other valuable natural resources. Nowadays, Russia makes most of its money by selling oil and natural gas to European countries. In recent months, the price of oil has fallen to record lows. Mr. Putin said that the low oil price was causing economic problems. He insisted that these problems could be solved.

Eighteen months ago, armed groups, or rebels, in eastern Ukraine began fighting against Ukrainian government forces. A ceasefire was agreed at the beginning of 2015. Many people suspect that Russian soldiers are helping the rebels. In the press conference, Mr. Putin admitted that Russia had sent people to assist the rebels. He had not said this before. Mr. Putin explained that these people were not Russian soldiers.

At the end of September, Mr. Putin sent Russian warplanes to Syria. There, Russia is supporting president Bashar al-Assad and the Syrian army. Many armed groups oppose the Syrian president. Other countries, such as the U.S., France, Britain, and Turkey, want Mr. al-Assad to leave Syria. Recently, a Turkish fighter jet shot down a Russian warplane. Turkey claimed that the plane flew over its border. At the press conference, Mr. Putin insisted that this was untrue. He **denounced** Turkey’s leaders.



*Journalists and reporters at President Putin’s annual press conference in Moscow, Russia (www.kremlin.ru)*

One reporter asked what Mr. Putin’s two daughters were doing. The president replied that he did not talk about his family. Yet Mr. Putin did say that they were not involved in business or politics. The conference ended after three hours and seven minutes. It was not the Russian leader’s longest press conference. In 2008 it lasted for four hours and 40 minutes. ■

## SULEIMAN'S HEART

Historians and archaeologists in Hungary have announced that the remains of an important Ottoman tomb have been found in the country. The tomb is believed to have been the burial place of a famous sultan's heart. The historians and archaeologists have spent many years searching for this site. Legends say that the sultan's heart was placed inside a case, or casket, before it was buried. The casket was made of gold.



Map of Ottoman Empire and the lands under Ottoman control during the reign of Suleiman the First

The Ottoman Empire was centered on modern-day Turkey. Constantinople was the capital of the empire. Today, this city is called Istanbul. The Ottoman Empire began around 1300 and lasted for just over 600 years. At its most powerful, it included large areas of Southeast Europe, the Middle East and North Africa.

Suleiman the First was born in 1494. He became the Ottoman sultan at the age of 26. Suleiman died in 1566, aged 71. His reign lasted for 46 years. This was longer than any other sultan. Under Suleiman's leadership, the empire became larger and more powerful. Suleiman changed how the legal system and army were organized. He ordered

the construction of many new buildings. They included: dams, bridges, schools, bathhouses, ornamental gardens, and [aqueducts](#). Many of these buildings still exist. Turkish people know Suleiman as "Suleiman the Lawgiver". In Europe he was called "Suleiman the Magnificent".

Suleiman took part in many battles. In 1566 he left Constantinople to command a large Ottoman army fighting in Hungary. Around 100,000 Turkish troops had surrounded a castle, or fortress, in southern Hungary. The castle was close to a town called Szigetvár. About 2,500 soldiers defended the castle. Most were Hungarians. A nobleman called Nikola Zrinski led them.

The fighting around the castle lasted for one month. Today, this battle is known as the [Siege of Szigetvár](#). Towards the end of the siege, there were only 600 soldiers in the castle. The others had been killed. As the Turks made their final attack, Zrinski and his 600 men suddenly charged out of the castle. All except a few died. Before running out of the castle, Zrinski had arranged for a fuse to be lit. After the Ottoman soldiers entered the building, the remaining gunpowder exploded.

Suleiman died in his tent the night before the siege ended. He probably had a heart attack. His advisers did not want the Ottoman soldiers to know that their leader was dead. The sultan's heart and internal organs were supposedly buried in the ground under his tent. Suleiman's body was then secretly taken back to Constantinople. His death was announced 48 days after he died. The sultan's body was placed inside a mausoleum, or tomb, in the largest mosque in the city.

Over 25,000 Turks died during the Siege of Szigetvár. The Ottoman Turks won the battle. However, most historians describe it as a "pyrrhic victory". This is a battle where the winner is also defeated. The Ottoman leaders planned to capture the city of Vienna (today's capital of Austria). Yet they never managed to do this.

After the death of Suleiman, the Ottoman Turks occupied the area around Szigetvár for more than 100 years. A small mosque and settlement were built where the sultan's heart was buried. In the 1680s the Austrian Habsburg Empire forced the Turks to withdraw from Hungary. The small mosque and nearby buildings were destroyed. Over time, their location was forgotten.



Part of a painting by Titian (1490–1576) showing Suleiman the First (the Magnificent, or the Lawgiver)

The historians and archaeologists uncovered the ruins of a small settlement in 2013. It is on a hill to the east of the castle. Recently, they found the remains of a tomb in a nearby building. The historians believe that this was where Suleiman's heart was buried. There is a large hole in the tomb. So whatever was inside it was taken or stolen a long ago. ■

## RWANDA REFERENDUM

A referendum, or vote in which all adults can take part, was held in Rwanda on December 18. The people were asked if they wanted to change a part of the country's constitution. These are the rules by which Rwanda is governed.

Paul Kagame is Rwanda's president. He is a popular leader. Mr. Kagame has been the country's leader since 2003. Rwanda's constitution says that presidents can serve two successive terms of seven years. Mr. Kagame was reelected for a second seven-year term in 2010. This term will end in 2017. The current rules say that he will not be able to stand for election again.

Some months ago a [petition](#) was started. People who signed wanted Mr. Kagame to stand for election for another seven years. This meant that the rules would need to be changed, or amended. About 3.7 million people signed the petition. Around 12.3 million people live in Rwanda. The people who signed the petition represent about 60% of those who are registered to vote. The petition was handed to the Rwandan parliament. After a debate, the members of parliament agreed to organize a referendum. So the people would decide if the constitution should be changed.

There are two main ethnic groups or tribes in Rwanda: Tutsis and Hutus. The country is a former colony of both Germany and Belgium. After Rwanda became an independent nation in 1962, Hutus ran the country. Violence often broke out between the two groups. Many Tutsis fled to surrounding countries. Some formed an armed group called the Rwandan Patriotic Front (RPF).

In 1994, Rwanda's president was killed in a plane crash. Hutus

were sure that the aircraft had been shot down. In Kigali, the capital city, many Hutus began murdering Tutsis. This was the beginning of what is now called the Rwandan genocide. After 100 days, the RPF arrived and took control of the country. Before this happened, at least 800,000 people were murdered in Rwanda. Then, this was 20% of the country's population. By this time, Paul Kagame had become the RPF's leader. Mr. Kagame then took charge of Rwanda's army. In 2000 he was appointed as the country's leader.



*Paul Kagame, the president of Rwanda, casts his vote in the country's constitutional referendum*

A presidential election was held in 2003. Mr. Kagame won easily. Seven years later, he got 93% of the votes. Some people complain that Mr. Kagame is too [authoritarian](#). Yet under his leadership Rwanda has become one of the most successful countries in Africa. Most people have jobs. Government officials are not dishonest, or corrupt, and the country's economy has grown. Rwanda has now become one of Africa's leading IT centers. In 2008, Rwanda became the first country in the world in which women held most seats in parliament.

The referendum result was announced the day after everyone had voted. Around 98% voted "yes". This means that they want the

constitution to be changed. The referendum result means that Mr. Kagame could be the president for another seven years. Mr. Kagame said that he welcomed the "yes" vote. However, he has yet to decide if he wants to stand in another election.

Not everyone thinks that the constitution change is a good idea. Some people in Rwanda believe that Mr. Kagame should stand down in 2017. Many of these people decided not to vote in the referendum. The leaders of the U.S. and some European countries have also advised Mr. Kagame not to stand for another seven-year term. They claim that having the same person in power for such a long time is bad for democracy. ■

## HOT JUPITERS

Researchers in the U.S. and Britain have been studying hot Jupiters. These are a type of exoplanet, or planet beyond our own Solar System. These large planets that orbit distant stars have puzzled scientists. They expected them to contain a lot of water or water vapor. Yet readings taken by large telescopes suggested that some were "dry".

Powerful telescopes are used to find exoplanets. The first one was discovered about 20 years ago. Now, scientists have recorded over 2,000. If an exoplanet passes in front of its star, it blocks a small amount of its light. Therefore, when seen from a certain angle, the star dims, as the exoplanet moves in front of it. Then, when the exoplanet has passed, the star gets brighter again.

Distant stars that are seen to dim and get brighter again may have one or more exoplanets circling them. Nowadays, space telescopes are able



Artist's impression of the ten hot Jupiters that were studied, images are to scale with each other

to work out what these planets are made of. In our Solar System planets are either “rocky” or made of gas. The four planets closest to the Sun: Mercury, Venus, the Earth, and Mars, are all rocky. Those farthest away: Jupiter, Saturn, Uranus, and Neptune, are made of gas. Jupiter is the biggest planet in the Solar System. It is often described as a natural gas giant.

Some of the exoplanets discovered so far are bigger than Jupiter. They are also made of gas. Yet unlike Jupiter, they are very near their sun, or star. So these gas planets are very hot. This is why they are called hot Jupiters. They orbit their star much closer than Mercury goes around our Sun. Some hot Jupiters take only three or four days to circle their sun.

Planets are made from clouds of dust and gas. When they circle new, or young, stars these clouds are like huge discs. Dust and natural gas within them gradually gather together, or accumulate. These clouds contain large amounts of oxygen, hydrogen and helium. After planets form, much of the oxygen becomes part of water molecules.

Past measurements of some hot Jupiters seemed to show that they were dry, or only contained small amounts of water. Scientists therefore thought that these gas

planets must have formed far away from their star. Then, over time, they moved, or migrated, closer and closer to their star. This, scientists thought, could explain why they were “dry”. However, in our Solar System, Jupiter has not migrated closer to the Sun.

The researchers from the U.S. and Britain used the Hubble and Spitzer space telescopes to study ten hot Jupiters. NASA (the National Aeronautics and Space Administration) operates both of these space observatories. Hot Jupiters are difficult to study. This is because the bright light from their nearby suns interferes with the signals detected by telescopes.

The results from the researchers’ study show that all ten hot Jupiters have plenty of water. The researchers discovered that some of the planets have thick layers of clouds. Others are cloudless. Previous recordings, they say, were **distorted** by the amount of cloud cover. The hot Jupiters with thick cloud layers were shown not to have much water. This is incorrect. These natural gas giants have just as much water as those without clouds.

The researchers now plan to work out how much water is in each of these planets’ atmospheres. ■

## BULLET TRAINS IN INDIA

Japan’s prime minister, Shinzō Abe, recently visited India. On December 12, he and Narendra Modi, the prime minister of India, made an agreement. It means that Japanese companies will build a high-speed railway system, or network, in India. The first project is to be built in the west of the country. It will connect the cities of Mumbai and Ahmedabad.

Japan began designing and building high-speed trains in the 1960s. It was the first country to do so. In Japan these trains are called “Shinkansen”. In English they have been given the nickname “bullet trains”. So far, Taiwan is the only other country that has asked Japan to build a high-speed railway. Indonesia has plans for a similar rail project. However, it recently announced that Chinese companies would build its railway.



Shinkansen trains in Japan

India has one of the largest railway networks in the world. The first railways were built in India over 150 years ago. Then, the country was part of a large British colony. This colony, which was known as “India”, included what are now Pakistan and Bangladesh. One of the first trains to operate in India has been preserved. Called the Fairy Queen, it was built in 1855. The engine, which still works, is the world’s oldest working steam train.

The company that operates most trains in the country is called Indian Railways. Today, the company has over 1.4 million workers, or employees. In India trains are a popular form of transport. Tickets are not expensive. Indian Railways runs 19,000 trains a day. Around 12,000 are for passengers. The others are [freight](#) trains.



Japan's prime minister, Shinzō Abe, and Narendra Modi, the prime minister of India

Each day around 25 million passengers travel on trains in India. This is more than the populations of many countries. Annually, or in one year, Indian Railways carries seven billion passengers. This figure is roughly six times India's total population of 1.2 billion. Many local trains are old and slow. Often, they are overcrowded. In recent years, several express trains have been built. Currently, the country's fastest train travels between the cities of New Delhi and Bhopal. This distance is roughly 435 miles (700 kilometers). The train completes its journey in seven hours and 50 minutes.

Mumbai is the largest city in India. Ahmedabad is one of the country's important industrial centers. The two cities are about 310 miles (500 kilometers) apart. The new rail-

way line will have 12 stations and 11 tunnels. The work is to be completed in 2023. After testing, the line will open the following year. The new trains' top speed is 199 miles (320 kilometers) per hour. At present, the train between Mumbai and Ahmedabad takes eight to ten hours. The new bullet trains will complete the journey in two hours. Indian Railways predicts that 35,800 passengers will travel on the new trains every day.

As well as the high-speed railway work, Mr. Abe and Mr. Modi made several other agreements. Japan will now provide technology to help India build several new nuclear power stations. India is also thinking about buying some Japanese-made military equipment.

In the future Japan hopes to build more high-speed railways in India. Other countries, such as Malaysia and Thailand, are also planning to build much faster rail networks. It's likely that Japan and China will compete for these projects.

One railway company in Japan has recently begun testing a new maglev train. It travels at 310 miles (500 kilometers) per hour. Maglev is short for magnetic [levitation](#). Instead of using wheels a maglev train travels along a single central rail, or monorail. It does this by using magnetic power. ■

## STICKLEBACK EVOLUTION

Most people think that evolution is a very gradual process. Animals and plants adapt to changes in their surroundings. They do this to survive. These changes happen over very long periods. Biologists from an American university have discovered that evolution can be far

quicker. They found some small fish that normally live in the sea. In less than 50 years they have turned into freshwater fish.

The fish are three-spined sticklebacks. These small silver-colored fish are found around most coastlines in the northern hemisphere. They grow to a length of four inches (ten centimeters). The fish live in the sea but breed in brackish water. This water is found where rivers and streams flow into the sea. Brackish water is a mixture of river water and seawater.



Three-spined sticklebacks

Male sticklebacks are best known for their parenting behavior. The male finds a sheltered place to build a nest. It starts by digging a shallow hole. The fish then creates a circular tunnel-shaped nest. It is made out of bits of plant matter. The male then swims off to find a female. The female is brought back to the nest. As she swims through the nest she deposits her eggs in the nest. There could be as many as 300. After the female leaves, the male swims into the nest and fertilizes the eggs. The eggs hatch six to ten days later. During this time, the male guards the nest. Newly hatched sticklebacks are called fry. The male continues to keep watch over the fry after they hatch. It does this until they can look after themselves.

In 1964 there was a very strong earthquake off the coast of Alaska. It had a magnitude of 9.2. It was

the second most powerful earthquake ever recorded. The strongest, a magnitude 9.5, was in Chile in 1960. The Alaskan earthquake was the biggest in American history. It caused many landslides as well as a tsunami, or giant wave. Not many people live in Alaska. The earthquake killed 131 people. Most were killed by the tsunami.



Damage caused by the 1964 earthquake in Alaska

Large areas were pushed up, or uplifted, by the force of the quake. In some places, the coastline was lifted 16 feet (five meters) higher. This uplift created a lot of seawater ponds. Sticklebacks caught in these ponds were trapped. They could not return to the sea. Over time, these ponds became full of fresh water.

The biologists studied the genes of the sticklebacks in the ponds. They could compare them with the genes of sticklebacks living in the sea. The fishes' eyes, body shape, bone structure, and color, had all changed. The biologists say that they quickly evolved to survive in the fresh water. The earthquake was over 50 years ago. Yet the biologists think that some of the evolutionary changes took less than 20 years.

The biologists say that the sticklebacks are a good example of what can happen when a creature's surroundings suddenly change. They suspect that, if needed, other organisms could evolve just as quickly. ■

## INTEREST RATE HIKE

The US Federal Reserve is America's central bank. It is usually called the "Fed". Janet Yellen is the Fed's current boss, or chair. On December 16, Ms. Yellen announced that the interest rate in the U.S. would rise by a quarter-point, or 0.25%. This is also known as 25 basis points. This was the Fed's first interest rate rise for nine years.

Most countries have a central bank. These banks work with the country's government. They are not like the banks that people and companies keep their money in. Britain's central bank is called the Bank of England. The Bank of Japan is the Japanese central bank. The 19 countries that use the euro as their currency have a "joint" central bank. It's called the European Central Bank (ECB). Normally, the central bank's headquarters is in the country's capital city. The Fed's headquarters is in Washington DC. The ECB is based in Frankfurt, one of the largest cities in Germany.



Federal Reserve building in Washington DC

Central banks control the amount of money in use. They also set the interest rate. This is the minimum amount of interest companies or people may need to pay when they borrow money from banks. If a country's economy is doing well, its central bank usually increases the interest rate. When it is doing

badly, it does the opposite. People who have savings in the bank get extra money when interest rates go up. They get less when rates are cut.

Central banks also keep a check on all the country's other banks in which people keep their money. They do this by regulating the banks, or making sure that they follow agreed banking rules. Central banks arrange for replacement banknotes to be printed and new coins made, or minted. Also, in times of economic difficulties, central banks may decide to increase the money supply. One way of doing this is by printing extra banknotes.

A rise in the interest rate is usually called a "hike". A decrease is known as a "cut". Before the recent announcement, the last time there was an interest rate hike in the U.S. was in June 2006. Then, the rate was 5.25%. In 2008 several large banks in the U.S. and other countries had difficulties. Some had to close. Others were taken over by larger banks. This period is now called "the banking crisis".

After the banking crisis, many countries went into **recession**. All governments try very hard to avoid recessions. This is when a country's economy gets smaller instead of bigger. Usually, people spend much less money in a recession. Companies may have to reduce the number of their workers. Some firms may be forced to close.

After the 2008 banking crisis, the Fed cut rates to almost zero percent. So the rate hike of 0.25% is the first since the banking crisis began. Most experts agree that this rate hike marks the end of the banking crisis and the recession that followed it.

Central bankers do not put up rates unless they are sure that the country's economy is improving.

They consider the unemployment rate, economic growth (GDP, or gross domestic product) and inflation. Unemployment is the number of people without a job. Inflation is the amount that prices in the shops are rising or the fall in the value of a currency. Usually, central bankers are happy with an inflation rate of 2%.

increases are expected in the future. However, these hikes are expected to be gradual. Most finance experts agreed with the rate rise decision. Many are predicting a further improvement in the U.S.'s economy. ■

### AGREEMENT IN LIBYA

On December 17, the leaders of two rival governments in Libya shook hands. They met in Morocco. The two men have agreed to form what's known as a unity government. Their agreement followed several days of talks, in Rome, the capital of Italy, and on the Mediterranean island of Malta. The United Nations (U.N.), the U.S., Italy, and Russia, arranged the talks.

For many years Muammar Gaddafi ruled Libya. He controlled the country under very strict laws for

over 40 years. At the beginning of 2011, there were big street demonstrations in the larger cities. The protesters demanded that Gaddafi and his family leave the country. They wanted to elect their own leaders.

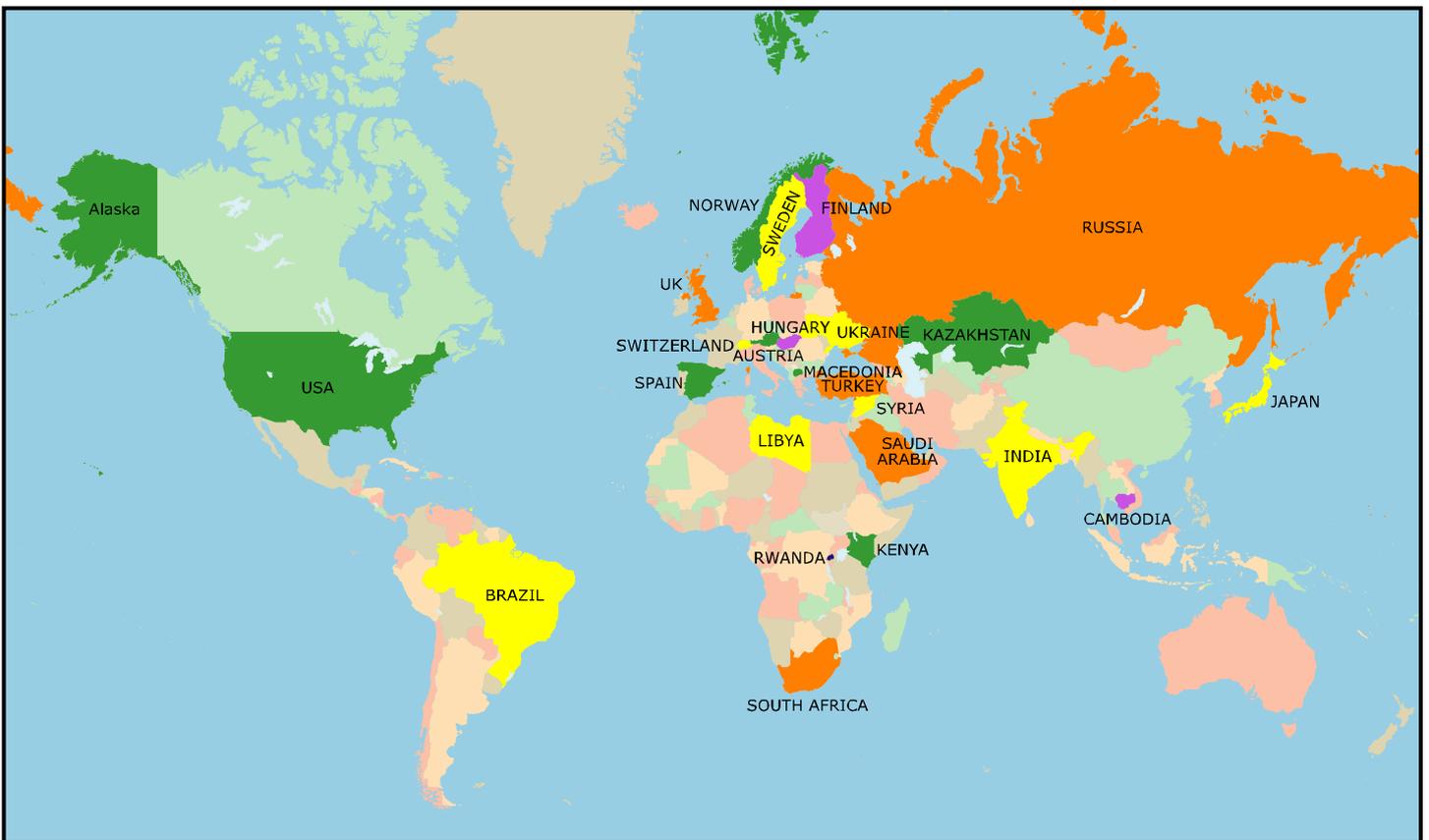
Anti-Gaddafi groups, or rebels, fought against the Libyan army. Several other countries such as France, Britain, Qatar, the United Arab Emirates (UAE), and the U.S. decided to intervene. At first, the leaders of these countries said that they wanted to protect civilians in Libya. However, their air strikes on the Libyan army's bases and its military equipment helped the rebels. The rebels eventually captured Tripoli, Libya's capital city. A few months later Colonel Gaddafi was caught and killed.

Since Gaddafi's death, several elections have been held. Yet these have not solved the Libya's many



Janet Yellen, chair of the Federal Reserve

Currently, unemployment in the U.S. is 5% (low or good), GDP is 2.6% (reasonable or good) and inflation is at 0.5%. Now that the Fed has finally hiked the interest rate more



problems. During the war the rebels captured most of the army's weapons. Many people in Libya now have guns. Armed groups control different parts of the country. The foreign countries that helped to remove Gaddafi decided not to get involved in what happened afterwards.



When Gaddafi ran Libya, the country made a lot of money from its oil. Most was sold to other countries. Nearly all of Libya's oil producing equipment has been badly damaged in the fighting. Currently, Libya has two rival groups or factions. Both claim to be the country's official government. One is based in Tripoli. The other is in Tobruk, a city in eastern Libya. There are large areas of the country that are not controlled by either group. Countries such as the U.S., France, Britain, and Egypt support the group that is based in Tobruk.

For the last 18 months Libya has been what's called a "failed state". There has been no proper system of government. Many parts of the country are lawless. Now, there is another problem. Groups that claim to support the Islamic State (IS) have taken control of an area around the city of Sirte. The IS is the militant group that currently occupies large parts of Syria and Iraq. It is also known as ISIS, ISIL and Daesh. IS supporters believe that everyone should follow very strict religious rules. Many people say that IS fight-

ers are fanatics who are prepared to commit genocide, or mass murder. They wear black clothing and treat Shia Muslims, Christians and people of other religions very harshly.

The U.N. has been trying to get the leaders of the two factions to speak with each other for many months. Now that they have agreed to work together others may be willing to help. Once the unity government has been formed, the U.N. will encourage other countries to become involved. The U.N. wants Libya's oil industry to be fixed and the IS militants in Libya defeated. ■

## MACEDONIA'S LAKE OHRID

Lake Ohrid is on the border between Macedonia and Albania. It is one of Europe's deepest and oldest lakes. There are three towns on the lake's shoreline. One is in Albania. One of the two in Macedonia is called Ohrid. Recently, the town's mayor spoke of his plans to build some luxury houses by the lake. The houses will have their own marina, or specially designed harbor. Marine scientists have complained. They worry that the building work will affect the lake's ecosystem.

Macedonia is a new country. It used to be a part of Yugoslavia. In 1991 Yugoslavia began to break up. The split was not peaceful and wars broke out between some of the regions. Today, what was Yugoslavia is now seven countries: Slovenia, Croatia, Bosnia, Serbia, Montenegro, Macedonia, and Kosovo.

Macedonia has had many arguments with Greece about its name. Alexander the Great (336–323 BCE) was one of the world's most successful military commanders. He came from a region called Macedonia.

In Alexander's time, Macedonia was part of what we now call ancient Greece. After Alexander died the borders of Macedonia kept changing. Sometimes the region became larger and, at other times, smaller. The northern part of modern day Greece is also called Macedonia.

When Macedonia became a new country in 1991, Greece made an official complaint to the United Nations (U.N.). The Greek government claimed that Macedonia was stealing its heritage of the ancient Macedonians and Alexander the Great. The U.N. tried to solve the problem by using the name "Former Yugoslav Republic of Macedonia", or FYR Macedonia (FYROM). Many countries have recognized Macedonia as a separate country. Most now use the name FYROM for official documents.



Part of Lake Ohrid

Lake Ohrid is 18 miles (30 kilometers) long and about 945 feet (288 meters) deep. Its water is very clear. Most lakes are less than 100,000 years old. Over time, they fill up with mud and rock. Lake Ohrid is thought to be about four million years old. The world's most famous ancient lakes are Lake Baikal, in Russia, and Lake Tanganyika, in Africa. Both of them are more than 20 million years old.

Because of its age, Lake Ohrid is home to many marine creatures that are not found anywhere else in the world. These include types of

fish, freshwater snails, sponges, and algae. Most of Lake Ohrid's water comes from another lake. This lake, called Prespa, is on the other side of a mountain. It is also higher than Lake Ohrid.



Many of the rocks in this part of Europe are limestone. This type of rock is soluble in water. Therefore, limestone often has many caves. These are formed over millions of years by underground rivers, streams and dripping water. Limestone caves can have spectacular formations of stalactites and stalagmites. Water from Lake Prespa flows through water channels in the limestone. It then bubbles up as springs on the bottom of Lake Ohrid and along its eastern shore. The only river that flows out of Lake Ohrid is called the Black Drin. It flows through Albania and into the Adriatic Sea.

Other water that flows into Lake Ohrid does so through a large marshy area. The marsh filters this water. It also cleans wastewater from the town of Ohrid before it reaches the lake. The town's mayor wants to drain this marsh to build the new houses and marina.

Titan is Saturn's largest moon. This moon has many lakes. These are filled with chemicals such as liquid methane. In 2010, NASA named one of Titan's lakes after Lake Ohrid. ■

## SOUTH AFRICA'S FINANCE MINISTERS

On December 13, Jacob Zuma, the president of South Africa, announced that Pravin Gordhan would be the country's new finance minister. Mr. Gordhan was South Africa's third finance minister within four days. This is very unusual. On December 16, many people took part in street demonstrations. Those who protested want Mr. Zuma to stand down, or resign.

Mr. Zuma is the leader of the African National Congress (ANC). This party has governed South Africa since 1994. This was soon after [apartheid](#) ended and Nelson Mandela (1918 – 2013) became South Africa's first black president. Mandela was a former ANC leader.

In South Africa the elected members of parliament choose the president. Since 1994 the ANC has always had far more members of parliament than other parties. Mr. Zuma was chosen to be the country's president in 2009. He was reappointed in 2014. Mr. Zuma is a [controversial](#) figure. He has frequently been accused of corruption, or dishonesty. Yet the South African president insists that all these accusations are false.



*The president of South Africa, Jacob Zuma*

Most countries have a finance minister. This is a very important position. Some countries use different titles. For example, in Britain the finance minister is called the

Chancellor of the Exchequer. Australia calls its finance minister the Treasurer of Australia. In the U.S. the finance minister is known as the Secretary of the Treasury. Other names include: minister of finance and minister of the economy.



*Pravin Gordhan, South Africa's minister of finance*

The finance minister has to make important decisions. This can be how much tax people have to pay and where and how the government spends its money. A finance minister cannot be [reckless](#) or careless. Wealthy companies or countries often invest large amounts of money in other nations. They would be unlikely to do this if they thought that the country's finance minister made bad decisions.

Mr. Gordhan was South Africa's finance minister from 2009 to 2014. Nhlanhla Nene was his deputy. When Mr. Gordhan moved to another job, Mr. Nene became the finance minister. Mr. Nene was respected and trusted. Currently, the South African economy is not doing well. Mr. Nene understood that the government needed to reduce the amount of money it spends.

On December 9, Mr. Zuma surprised many people. He announced that Mr. Nene had been removed. He did not explain why. The government owns the South African

Airways Company. Recently, the airline company has been losing money. Yet, the company's boss wanted to order some new aircraft. She and Mr. Zuma are good friends. As the government would have to pay for the aircraft, Mr. Nene overruled the order. Many people suspect that this is why Mr. Zuma dismissed him.

Mr. Zuma immediately appointed David van Rooyen as the new finance minister. Mr. Rooyen is not well known. Also, he has not done an important government job before. Investors in South Africa were quick to react. Many decided to take their money out of the country. The value of the rand, or the country's currency, suddenly dropped. This means that it has become very expensive for South Africans to buy things made in other countries. If people kept taking money out of South Africa, the economy could "crash".

Mr. Zuma's advisers insisted that he dismiss Mr. van Rooyen and appoint someone who is known and trusted. They suggested that he bring back Mr. Gordhan. Mr. Gordhan, who was about to retire, agreed to return. He immediately spoke with news reporters. Mr. Gordhan told them that he would make sure that the country's finances were managed correctly.

The protesters are angry. They believe that Mr. Zuma has badly damaged the country's reputation. They say that he is no longer capable of leading South Africa. ■

## THE EARTH'S OXYGEN

Life on the Earth began in the seas and oceans. The first land animals, or tetrapods, came out of the sea around 370 million years ago.

Complex life could not have started without oxygen. It's thought that the first oxygen appeared around 2.3 billion years ago. At that time, only tiny microbe-like organisms lived on the Earth. More complex air-breathing creatures did not exist until oxygen levels increased around 600 million years ago.



What "snowball Earth" may have looked like (NASA)

One theory says that this increase in oxygen took place over a short geological period. It happened after what's known as the Gaskiers glaciation. This is also known as "snowball Earth". The whole planet was covered in ice. This big freeze happened about 580 million years ago. It lasted for several million years.

When the Earth warmed, melting ice carried **nutrients** from the land to the sea. These helped blue-green algae called cyanobacteria to grow. As the algae spread, it put extra oxygen in the oceans. This oxygen in the oceans helped tiny many-celled, or multicellular, organisms to develop. These simple organisms fed on the nutrients and created even more oxygen. More complex moving creatures then evolved. If this theory is correct, it means that evolution was driven, or pushed forward, by these small creatures.

A group of researchers from the U.S. and Britain now believe that this theory is wrong. They have been studying rocks called marine

shales. The researchers tested these rocks in the U.S., Canada and China. Hundreds of millions of years ago all of these shale rocks were under the sea. The researchers worked out how much oxygen was in the oceans when these rocks formed on the seabed. By dating the rocks, they were able to track the build-up of oxygen over a long period.

The researchers say that the oxygen levels increased over a much longer period than previously thought. They believe that it took 120 million years. During this period there were three "snowball Earths". The first is known as the Sturtian glaciation. This was roughly 716 million years ago. The next one is called the Marinoan, which was around 635 million years ago. The last was the Gaskiers glaciation. Each snowball Earth lasted for million of years.



The Blue Marble, a famous photograph of the Earth, taken by the crew of Apollo 17 in 1972 (NASA)

After each event, melting ice took nutrients from the land to the oceans. So all helped to add extra oxygen to the water. After 120 million years there was enough oxygen in the oceans for complex life forms to develop. Previously scientists thought that these small marine creatures drove evolution by creating the extra oxygen. The researchers say that their work shows this is incorrect. Evolution,

they say, was driven by the three freezing and melting events, as they led to higher oxygen levels in the oceans. ▣

## ISLAMIC MILITARY ALLIANCE

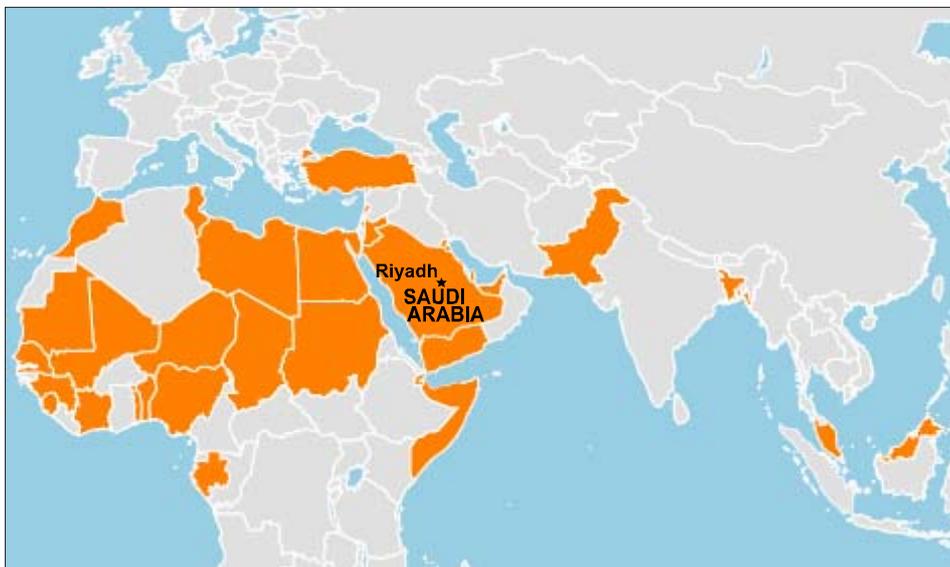
The U.S., France, Britain, Russia, Turkey, and Iran have become involved in the war in Syria. Some are planning for a different outcome. However, all want to defeat the militant group called the Islamic State (IS). Some people in these countries have criticized Arab nations. They believe that Arab countries in the Middle East should do more to help beat the IS in both Syria and Iraq.



Prince Mohammed Bin Salman, Saudi Arabia's Defense Minister (Saudi Arabia News)

Mohammad bin Salman Al Saud is a member of Saudi Arabia's royal family. He is a deputy crown prince and the country's defense minister. On December 14, Prince Mohammad made an announcement. He said that a military **alliance** had been formed. Over thirty Muslim countries had agreed to join. The new alliance's headquarters is in Riyadh, Saudi Arabia's capital city. Its full name is the "Islamic Military Alliance to Fight Terrorism". Prince Mohammad said that the alliance had been formed to protect Muslim countries from all militant groups and terrorist organizations.

Currently, militant Islamic groups are causing problems in



Member countries of the new Islamic Military Alliance

many Muslim countries or countries with large Muslim populations. These include: Syria, Iraq, Yemen, Pakistan, Afghanistan, Somalia, Egypt, Libya, Mali, and Nigeria. These militant groups do not believe in democracy. They believe that everyone should obey very strict religious laws. Prince Mohammad said that the new alliance would fight against terrorist organizations in Iraq, Syria, Libya, Egypt, and Afghanistan. He also explained that the alliance would work with the United Nations (U.N.).

Some people were surprised that larger Shia countries are not part of the new alliance. Muslims are either Sunnis or Shias. The divide between Sunni and Shia goes back to the Prophet Muhammad, nearly 1,400 years ago. All Muslims believe that Muhammad was God's messenger. After he died there was a disagreement about who should be the Muslim nation's leader. Shias wanted the leadership to pass to one of Muhammad's relatives. Sunnis believed that this person should be chosen or elected.

About 85% of the world's Muslims are Sunnis. Most Shia Muslims

live in Iran and southern Iraq. Syria, Yemen, Lebanon, and Bahrain also have large Shia communities. Saudi Arabia is a Sunni country. The two largest Shia nations, Iran and Iraq, are not part of the new Islamic Military Alliance.

In Syria much of the fighting is split between Sunni and Shia. Many armed groups are trying to depose the country's president, Bashar al-Assad. These groups are mostly Sunni. Mr. al-Assad and his supporters are Shias. Sunni countries like Saudi Arabia oppose Mr. al-Assad. Yet Iran has sent soldiers to Syria to support the Syrian president. Hezbollah is based in southern Lebanon. It is a Shia political and military organization. Hezbollah also has soldiers fighting for Mr. al-Assad in Syria.

The leaders of many countries welcomed Prince Mohammad's announcement. However, some people think that the alliance was unlikely to make a difference. Who is in charge and how military operations are to be organized are not known. Others argue that the alliance will not work until the big Sunni and Shia countries agree to work together. ▣

## FACE MITES AND MIGRATION

Scientists in the U.S. have been studying microscopic organisms. These tiny creatures live on people's faces. The scientists believe that these "face mites" could help other researchers work out how modern humans spread around the world tens of thousands of years ago.



Magnified face mite (*Demodex folliculorum*)

Scientists have known that face mites existed for a long time. There are two types. Both have eight short legs, which are near their heads. The creatures' bodies are worm-like. *Demodex folliculorum* prefers to live in pores, or tiny openings, in the skin and hair follicles. These follicles are the holes from which individual hairs grow. *Demodex brevis* likes sebaceous glands. These are deep inside hair follicles. They produce and oily substance called sebum. It keeps the skin moist.

There are more pores and sebaceous glands around the face than other parts of the body. This probably explains why the mites live on the face. They reproduce by laying eggs. No one knows what the mites eat. It could be bacteria, dead skin or sebum. Face mites seem to do no harm. Some people think that the mites help by eating bacteria and dead skin. One person's face may be home to a few hundred mites. Another person could have thousands of them. More mites can live on one side of the face than the other. They

can be passed to, or picked up from, others by face-to-face skin contact.

The scientists took some face skin samples from 70 people. All the samples contained face mites. The people had different backgrounds. They came from Europe, Asia, Africa, and Latin America. The scientists analyzed each face mite's DNA. They were able to divide the mites into four separate groups, or "clades". Clades are organisms that probably evolved from a common ancestor.

The scientists think that families are more likely to share the same mites. This is because they have more face-to-face contact. Therefore a person probably has the same types of mites that lived on their distant ancestors' faces. So face mites are passed down from one generation to another.



Magnified face mite (*Demodex brevis*)

The scientists estimated that the common ancestor of each face mite clade lived three million years ago. This is before modern humans evolved. People of African descent had the biggest mixture of mites. Their face mites come from all four clades. Most of the world's ancient human-like fossils have been found in Africa. Researchers are now sure that this is where modern humans (or *Homo sapiens*) originally came from. People from Asia and Latin America had at least three clades, but Europeans only one. The scientists say that other clades could

exist. This is because they have not taken face samples from all the world's different races. Aboriginal Australians are one example.

Modern humans are believed to have started to move out of Africa about 70,000 years ago. Then, over thousands of years, they spread around the world. For instance, humans first arrived in Australia about 45,000 years ago. Then, huge amounts of water were "locked up" in thick ice sheets. Sea levels were much lower. Therefore these early humans may have been able to walk from Southeast Asia to Australia. They could also walk from what is now the far east of Russia, or Siberia, into Alaska.

After crossing to North America sometime between 26,000 and 18,000 years ago humans moved southward. The first people are believed to have reached the southern tip of South America 10,000 years ago. Some people dispute this. They believe that humans first traveled to South America by boat from Pacific islands. The scientists think that face mites could prove if this happened. For example, native Pacific island people might have the same face mites as Indians living in the Amazon rainforest. ■

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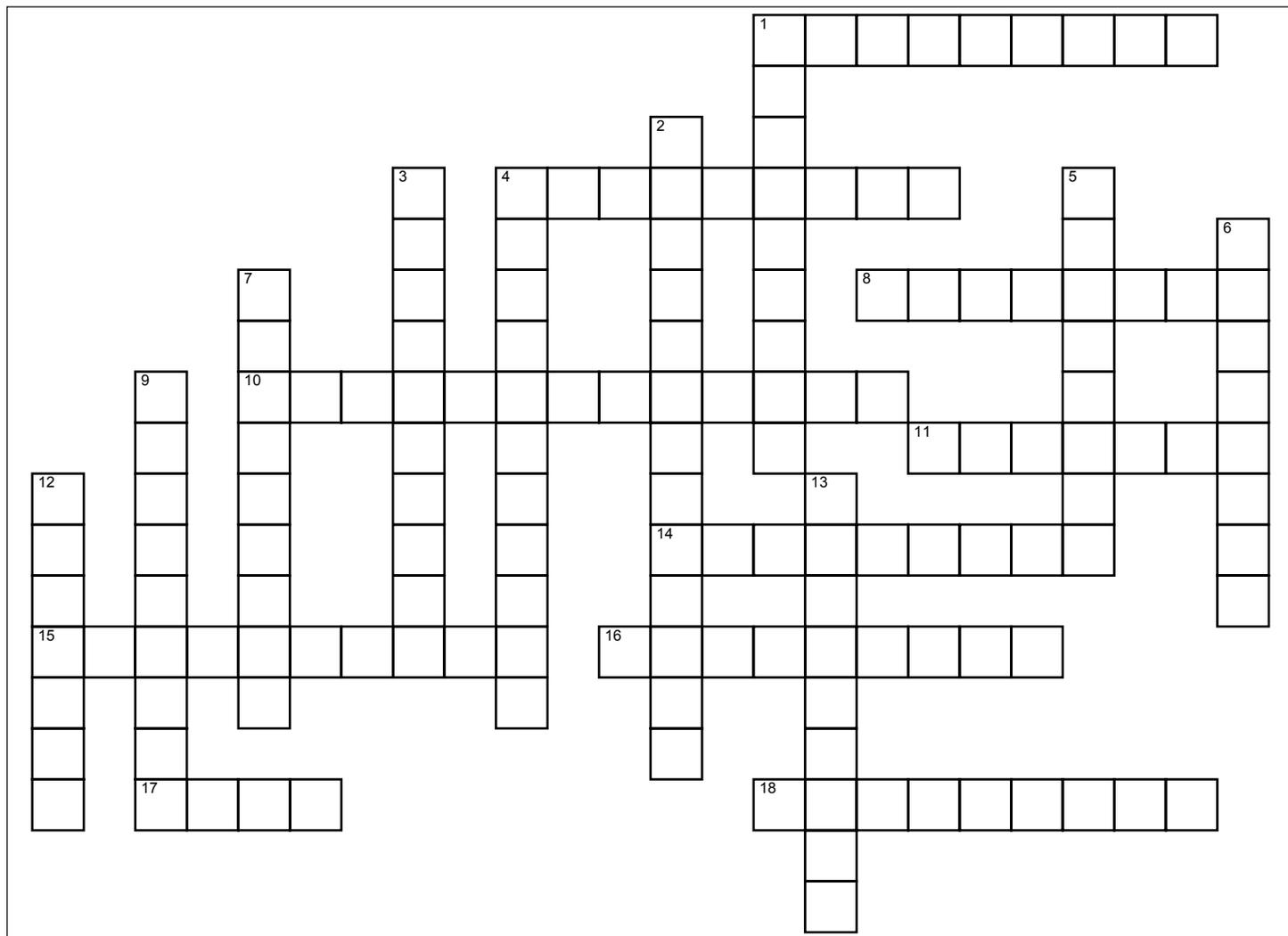
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# ISSUE 265 GLOSSARY PUZZLE

**INSTRUCTIONS:** ① Complete the crossword. The answers are highlighted in orange in the news stories. There are 25 words highlighted and you need 20 of them to complete the crossword. ② Once you have solved the crossword go to the word search on the next page ➡



### Across

- 1 *Noun* Describes actions taken to save money, especially living more simply and strictly controlling spending
- 4 *Noun Plural* The lower parts of rivers where they reach the sea and the tide flows in and out
- 8 *Noun* A union of two or more groups that support each other
- 9 *Adjective* Likely to cause arguments
- 11 *Noun* Goods transported by truck, train, ship or aircraft
- 14 *Noun Plural* Structures built to carry water over a long distance, either by tunnels or more usually by bridges
- 15 *Noun* An unusual or remarkable event or occurrence
- 16 *Verb* Changed information so that it is no longer true or accurate
- 17 *Noun* A ridge projecting from a mountain or mountain range
- 18 *Noun* The community of living things in an area and the environment in which they live

### Down

- 1 *Noun* Government policy of keeping people of different races apart
- 2 *Adjective* Believing in strict obedience
- 3 *Noun* Floating in the air without any support
- 4 *Verb* Advancing beyond a boundary or beyond agreed limits
- 5 *Noun Plural* Large holes in the ground from which stone or sand is dug up for use in building
- 6 *Noun* A formal written request signed by many people
- 7 *Noun* A reduction in a country's trade or prosperity
- 9 *Noun Plural* Substances that provide nourishment needed for life and growth
- 12 *Noun* A place, especially a group of buildings, made up of a number of interconnecting parts
- 13 *Verb* Publicly declared that someone or something is wrong or evil

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## GLOSSARY PUZZLE *CONTINUED*

**INSTRUCTIONS:** ③ Find 19 of the 20 crossword answers in the word search. Words can go vertically, horizontally, diagonally and back to front. ④ After finding the 19 words write down the 20th (or missing) word under the puzzle.

C O N T R O V E R S I A L J K R P G  
 O J O V C F A U S T E R I T Y H K N  
 M I V A S T H Q D X N N E N E E J I  
 P E I Y E G H E U N U B X N D C J H  
 L N B K S S N G E E L S O P E O J C  
 E E I P T O J V I S D M L O N S A A  
 X D S P U R D Y K E E U I J G Y P O  
 E E Z N A L L G T N R T C G O S S R  
 S W C S R F O R O L V F T T V T B C  
 V E W H I X O N E P R F S K S E Y N  
 D P E H E T W V U X N B X F Q M I E  
 M S F X S D I E H T R A P A D D K J  
 Z B Y I J T O T U B R N N Y T H S R  
 E J D O A X O F G S E I R R A U Q O  
 E F Y T M C I O B R E C E S S I O N  
 F D I Q E R X R S N M R N N M W X Y  
 N O Q F V N J Z O E P E T I T I O N  
 N A I R A T I R O H T U A I Q S Y Y

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MISSING WORD ANSWER =

ISSUE 264 ANSWERS

INFAMOUS